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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,385	07/06/2004	John K. McCormick		5116

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EXAMINER	
CHONG CRUZ, NADJA N	
ART UNIT	**PAPER NUMBER**
3623	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,385	MCCORMICK, JOHN K.	
	Examiner	Art Unit	
	NADJA CHONG CRUZ	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06 July 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. This is a Non-Final office action in reply to the application filed on 6 July 2004.

2. Claims 1-16 are currently pending and have been examined.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "25". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

5. The specification is objected to because the content and arrangement of the disclosure do not conform to the rules outlined in the several sections of 37 CFR and the MPEP reproduced briefly

below. Applicant is reminded of the proper content and organization of the specification specifically with regard to the following sections.

6. Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).

(e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

(f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(l) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Appropriate correction is required.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re*

Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

8. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

9. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, 13 and 18 of copending application No. 10/710,384. The conflicting claims are not identical, because copending claim 1 requires the additional steps of "running the material requirements planning…", "determining the first expected result…" not required by claim 1 in the instant application. However the conflicting claims are not patentably distinct from each other because:

Claim 1 (instant) and claims 1 and 6 (copending) recite common subject matter;

Claim 13 (instant) and claims 13 and 18 (copending) recite common subject matter.

Whereby the elements of claims 1 and 13 (instant) are fully anticipated by copending claims 1, 6, 13 and 18, and anticipation is "the ultimate or epitome of obviousness" (*In re Kalm*, 154 USPQ 10 (CCPA 1967), also *In re Dailey*, 178 USPQ 293 (CCPA 1973) and *In re Pearson*, 181 USPQ 641 (CCPA 1974)).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending application No. 10/710,396. The conflicting claims are not identical, because copending claim 1 requires the additional steps of "selecting and

saving a desired target value…", "determining the formula…" not required by claim 1 in the instant application. However the conflicting claims are not patentably distinct from each other because:

Claim 1 (instant) and claim 1 (copending) recite common subject matter;

Whereby the elements of claims 1 and 13 (instant) are fully anticipated by copending claims 1, 6, 13 and 18, and anticipation is "the ultimate or epitome of obviousness" (*In re Kalm*, 154 USPQ 10 (CCPA 1967), also *In re Dailey*, 178 USPQ 293 (CCPA 1973) and *In re Pearson*, 181 USPQ 641 (CCPA 1974)).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 10-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As per claims 10-12 recites *wherein the said new order and/or lot size comprises a data structure instantiating code segment that establishes a storage record in memory*. This limitation is not supported by the original disclosure.

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. As per claims 1 and 13, recites *the primary strategic objective, the possible measures, the primary strategic objective measure, the independent jobs and/or orders, the possible constraints, the constraint, the order, the said work schedule measure, said job and/or order, the work queue, the dependant jobs and/or orders, the largest positive impact* and *the said prioritized constraint first*. As per claims 2, 6 and 14 recites *the said scheduled job and/or order* and *the (said) impact*. As per claims 3 and 15 recites *the possible desired strategic objective result measures*. As per claim 5 recites *the desired strategic objective result measure, the planning period, the work schedule measure, the work queue, the prioritized constraints, the independent jobs, the dependant jobs and/or order, the highest priority constraint, the largest positive impact, said work schedule measure first, said largest positive impact first* and *said jobs and/or orders*. As per claim 7 recites *the strategic objective result measure*. As per claim 9 recites *the sequence or order, the entity's primary strategic objective, the operational side, the said strategic direction, the calculations, the work schedule measure, the work schedule, the dependant activities or work, the largest impact* and *said prioritized constraints first*. As per claim 10 recites *the said new order and/ or lot size, the scheduled activity or work, the impact* and *said work queue*. As per claim 11 recites *the selected strategic result measure* and *the largest positive impact being first*. There is insufficient antecedent basis for these limitations in the claim.

17. As per claims 1 and 13, recites *n. scheduling the job and/or order with the said largest positive impact*. Examiner is not clear which job and/or order is schedule, independent job and/or order, dependant job and/or order or both? Appropriate correction is required.

18. As per claims 1-16 recites the limitations *the possible measures, the possible constraints, the largest positive impact, the possible desired strategic objective result measures* and *any strategic objective*. Those limitations are vague and indefinite, the limitations fails to further limit the claims,

and furthermore one ordinary skill in the art would no be able to ascertain the metes and bounds of the limitation. Appropriate correction is required.

19. As per claims 2, 6 and 14 recites *removing/remove the said scheduled job and/or order from the said work queue*. Examiner is not clear how a scheduled job and/or order are included in a work queue, when a work queue is for unscheduled job and/or order. Further, for clarification purposes, the specification discloses in paragraph 0046, "[t]he next step is to remove that job/and or order 23 along with all other orders that do not require any other parts and/or order from the work scheduling queue." Appropriate correction is required.

20. As per claim 13, recites *a device and system*. Claim 13 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because the claimed invention is directed to neither a "machine" nor a "system".

21. As per claim 9, recites *e. repeating steps i through iv for each of the said constraints until all of the said constraints and all of the said activities or work have been scheduled*. Claim 9 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because steps i though iv are not disclosed in claim 9 and limitations *a* through *d* does not disclose performing scheduling of the constraints, limitations *a* through *d* are values stored in a data structure for sorting purposes.

22. As per claims 13-16. Claim elements "means for defining, means for prioritizing, means for electing, means for listing, means for selecting, means for scheduling, means for calculating, means for sorting, means for removing, means for adding, means for identifying, " are a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. The disclosure provides *the software code* (paragraph 0026). Simply reciting "software" is insufficient disclosure of the corresponding structure, material, or acts for performing the claimed function because the disclosure does not provide what structures corresponds to each means limitation in the claims. Therefore, one person of ordinary skill in the art would not know and understand the claimed invention.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 101

23. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

24. Claims 1-4 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Based on Supreme Court precedent and recent Federal Circuit decisions, *88 USPQ2d 1385 In re Bilski U.S. Court of Appeals Federal Circuit*. A method claim must meet a specialized, limited meaning to qualify as a patent-eligible process claim. As clarified in *Bilski,* The test for a method claim is whether the claimed method is (1) tied to a particular machine or apparatus, or (2) transforms a particular article to a different state or thing. This is

called the "machine or-transformation test" (see at least *Diamond v.* Diehr, 450 U.S. 175, 184 (1981); *Parker v.* Flook, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v.* Benson, 409 U.S. 63, 70 (1972); *Cochrane v.* Deener, 94 U.S. 780, 787-88 (1876).

25. There are two corollaries to the machine-or-transformation test. First, a mere field-of-use limitation is generally insufficient to render an otherwise ineligible method claim patent eligible. This means the machine or transformation must impose meaningful limits on the method claim's scope to pass the test. Second, insignificant extra-solution activity will not transform an unpatentable principle into a patentable process. This means reciting a specific machine or a particular transformation of a specific article in an insignificant step, such a data gathering or outputting, is not sufficient to pass the test.

26. Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. See Benson, 409 U.S. at 71-72. As Comiskey recognized, "the mere use of the machine to collect data necessary for application of the mental process may not make the claim patentable subject matter." Comiskey, 499 F.3d at 1380 (citing In re Grams, 888 F.2d 835, 839-40 (Fed. Cir.1989)).

27. Incidental physical limitations, such as data gathering, field of use limitations, and post-solution activity are not enough to convert an abstract idea into a statutory process. In other words, nominal or token recitations of structure in a method claim do not convert an otherwise ineligible claim into an eligible one. Claims 2-4 inherit the same deficiencies as claim 1 and are therefore rejected for the same reasons as claim 1.

28. It is also noted that the mere recitation of a machine in the preamble in a manner such that the machine fails to patentably limit the scope of the claim does not make the claim statutory under 35 U.S.C. § 101, as seen in the Board of Patent Appeals Informative Opinion Ex parte Langemyr et al. (Appeal 2008-1495).

29. Claims 9-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

30. The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

31. As per claims 9-12 recites *a computer program embodied on a computer-readable medium* Therefore, these claims are drawn to functional descriptive material (i.e., a computer program or software) recorded on a computer readable medium, as opposed to a computer readable medium storing/embodying the functional descriptive material. The former defines a computer program or software per se, recited as residing on a computer readable medium. However, because the claim begins by defining purely software, and the storage thereof may be interpreted as an intended use or purpose statement, it appears that the claim is defining the software per se. A "program" per se is non-statutory, as being an abstract idea. The element of "stored on a computer readable memory" may be where it is stored, but it is the program itself that is being claimed (and again, programs or software per se. are non-statutory).

32. The latter recites a statutory product (i.e., a computer readable medium), defined by virtue of the functional descriptive material embodied thereon. Claims conforming to 35 USC 101 for computer implemented software should be directed to computer readable media embodying a program, NOT a program stored on a computer readable medium ("a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035; - *Interim Guidelines, Annex IV*).

Examiner suggests drafting the preambles to read "computer-readable medium encoded with a computer program".

33. In addition, claim 9 recites functional descriptive material on a computer readable medium. However, the program/algorithm itself merely manipulates data (e.g., a storage record), or merely solves a mathematical problem without a limitation to a practical application. A practical application exists if the *result* of the claimed invention is "useful, concrete and tangible" (with the emphasis on "result")(Guidelines, section IV.C.2.b). A "useful" result is one that satisfies the utility requirement of section 101, a "concrete" result is one that is "repeatable" or "predictable", and a "tangible" result is one that is "real", or "real-world", as opposed to "abstract" (Guidelines, section IV.C.2.b)). Claim 9 merely manipulates data without ever producing a useful, concrete and tangible result. Claim 9 disclose *a data structure* where values (e.g., the calculations, prioritized constraints, the calculated work schedule measures, work schedule) are store in it.

34. Claims 14-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, because the claimed invention *[t]he means of claim 13* does not fall within at least one of the four categories of patent eligible subject matter recited in 35 U.S.C. 101 (process, machine, manufacture, or composition of matter).

Claim Rejections - 35 USC § 103

35. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

36. Claims 1, 3-5, 7-9, 11-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al., (US 5,671,361) hereinafter "Brown" in view Ouimet (US 2002/0107819 A1) further in both view of Draman et al., Constraint-based accounting and its impact on organizational performance: A simulation of four common business strategies, Integrated Manufacturing System, 2002, hereinafter "Draman" and Boonkhun, Analysis of Operations

Research Models Using Activity-Based Costing, The Pennsylvania State University, December 2002.

Claims 1 and 13:

Brown as shown discloses a method for scheduling activities and/or work consistent with an entity's strategic objective, the method comprising:

- *f. scheduling all of the independent jobs and/or orders* (column 3, lines 26-28, which teaches "[s]chedule the activities/task (e.g., independent jobs and/or order) "in priority order while maintaining the precedence relationships" (e.g., see Figure 3) "for the project network and satisfying resource constraints");

- *i. defining the possible constraints for scheduling said work* (column 6, lines 33-61, which teaches Table 1, which disclose "[t]he resource requirements" (e.g., the possible constraints) "for each activity", where "[r]esource Type# is what type of resource is necessary to do the work (i.e., for example: Resource Type 1 can be Trucks, Resource Type 2 can be workers, Resource Type 3 can be money)");

- *j. selecting the constraint by which said work will be scheduled* (column 7, lines 16-24, which teaches "[t]he resource availability (Total Number of particular Resource Type available) for this project" where the table illustrates the constraint selected: 5 for resource type 1, 5 for resource type 2 and 3 for resource type 3. In addition, column 2, lines 22-24, which teaches that "schedules single or multiple projects with single or multiple resource constraints");

- *k. prioritize the order of the constraints to schedule said work by* (column 2, lines 24-26, which Brown teaches that it "incorporates the time and the resource characteristics of project activities into a priority rule based search heuristic to determine an activity's priority for scheduling" and column 3, lines 24-25 which teaches "[r]ank the activities/tasks in order of the priority rule value");

- *l. calculating the said work schedule measure for each said job and/or order in the work queue for the said prioritized constraint* (column 3, lines 22-25, which teaches "[d]etermine the priority rule values for each activity and task" and "[r]ank the activities/tasks in order of the priority rule value");

- *m. sorting the dependant jobs and/or orders based upon the said work schedule measures with the said job and/or order that has the largest positive impact on the said work schedule measure first* (column 3, lines 24-25 which teaches "[r]ank the activities/tasks" (e.g., dependant jobs) "in order of the priority rule value" (e.g., work schedule measures), Figure 3, which it illustrates the relationship between the activities/task (e.g., independent and dependant jobs) and column 4, lines 1-4, which teaches that "[e]ach job or activity would have a LFT value computed. The PRST algorithm utilizes this LFT value to help establish priorities" (e.g., the largest positive impact) "among activities for scheduling purposes");

- *n. scheduling the job and/or order with the said largest positive impact on the said work schedule measure on the said prioritized constraint first; and* (column 3, lines 26-28, which teaches"[s]chedule the activities/task in priority order while maintaining the precedence relationships for the project network and satisfying resource constraints");

- *o. repeating steps k through n for each of the said constraints until all of the said constraints and all of the said jobs and/or orders have been scheduled* (Abstract, which teaches "[t]he priority values are ranked to determine an optimum schedule of **all** job tasks and activities" (independent and dependant jobs) "to complete the entire project");

Brown provides "an algorithm that minimizes time duration project schedule" (e.g., strategic objective: minimize project time) "for a sequence of job tasks". Further, Brown provides "a project scheduling algorithm that looks ahead in time to anticipate and avoid infeasible

schedules" (e.g., strategic objective: minimize cost by decreasing downtime and backorder). (Brown, column 2, lines 6-11). Brown fails to explicitly teach the following limitations. However, Ouimet, in an analogous art of scheduling/planning for the purpose of satisfying at least one strategic objective (¶ 0010) as shown does:

- *c. selecting the primary strategic objective* (Figure 6, "Select Primary Goal", ¶ 0026, which teaches "select and define a primary objective or goal");
- *d. listing the possible measures for the said primary strategic objective* (¶ 0054-0068, which teaches a list of possible measures for said primary strategic objective (e.g., profit));
- *e. selecting the primary strategic objective measure* (¶ 0069, which teaches that "the task of selecting the primary objective from the Aggregate Measure Table may also includes the further task of selecting whether the objective is to maximized or minimized. Strategic Objectives are also included in the Aggregate Measure Table and are selected by the user");
- *g. defining the possible measures to be used for scheduling work consistent with the said primary strategic objective measure* (¶ 0026, which teaches that "the user must first select and define a primary objective or goal. The most common primary objective is profit" (e.g., primary strategic objective measure) where possible measures are defined from the list of possible measures (¶ 0054-0068) "[t]he User Defined Measures include a weighted mix of any of the previously defined aggregate measures");
- *h. selecting a primary measure for said scheduling of work consistent with the said primary strategic objective measure* (¶ 0026 and 0054, which teaches that "the system lists the various Aggregate Measures table from which the user can make a selection for any particular simulation" (e.g., aggregate measure: primary measure).

"[f]or example, a major decision that affects profit" (e.g., primary strategic objective measure) "is price" (e.g., a primary measure));

Therefore, it would have been obvious to one of ordinary skill in the art to modify Brown to include the teaching of Ouimet because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable as evidenced by Draman, which teaches that "[w]idget recently adopted product profit" (e.g., primary strategic objective measure) "as the criterion" (e.g., primary measure) "for establishing its weekly production schedule" (Draman, page 192, second column, last paragraph).

Brown provides "an algorithm that minimizes time duration project schedule" (e.g., strategic objective: minimize project time) "for a sequence of job tasks" (Brown, column 2, lines 6-11) as discussed above. Ouimet teaches an "optimization of a planning model while simultaneously satisfying at least one strategic objective" (Ouimet, ¶ 0010). Brown and Ouimet fail to explicitly teach the following limitations. However, Boonkhun in an analogous art of scheduling/planning for the purpose of defining and prioritizing strategic objectives (page 63) as shown does:

- *a. defining the strategic objectives* (page 63, 3.2.2. Methodology, which teaches "[d]efine the strategic objectives/goals of the company");
- *b. prioritizing the said strategic objectives* (page 63, 3.2.2. Methodology, which teaches "rate the importance of each strategic objective/goal relative to others");

Therefore, it would have been obvious to one of ordinary skill in the art to modify Brown in view of Ouimet to include the teaching of Boonkhun because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claims 3 and 15:

Brown fails to explicitly teach the following limitations. However, Ouimet, in an analogous art of scheduling/planning for the purpose of identifying the possible desired strategic objective result measures (¶ 0099) as shown does:

- *a. identifying the possible desired strategic objective result measures* (¶ 0099 which teaches that "the present invention could be used to control the prices predicted by any demand model to ensure that a particular desired price image" (e.g., the possible desired strategic objective result measure) "is attained" where desired price image is identified in order to control the prices);

- *b. selecting one of the said desired strategic result measures* (¶ 0069, which teaches that "the task of selecting the primary objective" (e.g., desired strategic result measure) "from the Aggregate Measure Table may also includes the further task of selecting whether the objective is to maximized or minimized. Strategic Objectives are also included in the Aggregate Measure Table and are selected by the user" and ¶ 0026 and 0054, which teaches that "the system lists the various Aggregate Measures table from which the user can make a selection for any particular simulation" (e.g., desired strategic result measure). "[f]or example, a major decision that affects profit" (e.g., desired strategic result measure) "is price");

- *c. calculating the said selected strategic result measure for each of the said constraints; and d. prioritizing the said selected strategic result measures for each of the said constraints with the said constraint having the largest positive impact being first* (¶ 0069 which teaches that [t]he system gives the user the option of ranking the multiple Strategic Objects in terms of weights to prioritize multiple strategic objectives or in terms of a target value for a particular Strategic Objective. When presented with a target value for a Strategic Objective, the system operates to find the proper weight for the Objective that will yield the target value after

optimization" and ¶ 0145 which teaches that "the Interpolation routine makes use of data that have already been calculated and stored in the Constraint Overview table");

Therefore, it would have been obvious to one of ordinary skill in the art to modify Brown to include the teaching of Ouimet because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claims 4, 8, 12 and 16:

Brown fails to explicitly teach the following limitations. However, Ouimet, in an analogous art of scheduling/planning for the purpose of using strategic objectives (¶ 0099) as shown does:

- *wherein any strategic objective is used* (Abstract which teaches "one or more strategic objectives");

Therefore, it would have been obvious to one of ordinary skill in the art to modify Brown to include the teaching of Ouimet because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 5:

The limitations of claim 5 encompass substantially the same scope as claims 1 and 3. Accordingly, those similar limitations are rejected in substantially the same manner as claims 1 and 3, as described above. The following are the limitations of claim 5 that differ from claims 1 and 3.

- *a. a memory that stores computer-readable code* (column 11, lines 9-10, which teaches "a Commercial Off The Shelf (COTS) Project software by itself" wherein a software is a computer-readable code);

- *b. a processor operatively coupled to said memory, said processor configure to implement said computer-readable code, said code configure to:* (Figure 2, which it illustrates a computer, wherein a computer contains a processor coupled to said memory);

Claim 7:

The limitations of claim 7 encompass substantially the same scope as claim 3. Accordingly, those similar limitations are rejected in substantially the same manner as claim 3, as described above.

Claim 9:

Brown as shown discloses a computer program embodied on a computer-readable medium, the computer program embodied on a computer-readable medium comprising:

- *the calculations for the work schedule measure that are consistent b. prioritized constraints for scheduling work by; c. the calculated work schedule measure for each said activity or work in the work schedule for the said prioritized constraints; d. a work schedule of the dependant activities or work in the said work schedule, sorted by the activity or work with the largest impact on the said work schedule measure of the said prioritized constraints first* (see tables 1 through 11 which they illustrate a storage record for each of the values and column 10, lines 50-64 and column 11, lines 9-10 which teaches that "[t]he invention has utility as a Commercial Off the Shelf (COTS) Project software");

- *and e. repeating steps i through iv for each of the said constraints until all of the said constraints and all of the said activities or work have been scheduled* (Abstract, which teaches "[t]he priority values are ranked to determine an optimum schedule of **all** job tasks and activities" (dependant jobs) "to complete the entire project");

Brown fails to explicitly teach the following limitations. However, Ouimet, in an analogous art of scheduling/planning for the purpose of storing the calculations for the primary strategic objective measure ¶ 0099) as shown does:

- *a. the calculations for the primary strategic objective measure* ¶ 0145 which teaches that "the Interpolation routine makes use of data that have already been calculated and stored in the Constraint Overview table")

Therefore, it would have been obvious to one of ordinary skill in the art to modify Brown to include the teaching of Ouimet because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 11:

The limitations of claim 11 encompass substantially the same scope as claims 3 and 15. Accordingly, those similar limitations are rejected in substantially the same manner as claims 3 and 15, as described above.

37. Claims 2, 6, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al., (US 5,671,361) hereinafter "Brown" in view Ouimet (US 2002/0107819 A1) further in both view of Draman et al., Constraint-based accounting and its impact on organizational performance: A simulation of four common business strategies, hereinafter "Draman" and Boonkhun, Analysis of Operations Research Models Using Activity-Based Costing, The Pennsylvania State University, December 2002.as applied to claims 1, 3-5, 7-9, 11-13 and 15-16 above in view of Cicirello, Weighted Tardiness Scheduling with Sequence-Dependent Setups: A Benchmark Library, Intelligent Coordination and Logistics Laboratory, February 2003.

Claims 2 and 14:

Brown as shown discloses the following limitations:

- *and b. adding the impact of the said work schedule measure from the said scheduled job and/or order to the said impact of each of the said jobs and/or orders remaining in the said work queue* (column 3, lines 47-50, which teaches that "[t]he four priority rules are combined through an equal interval search technique by linear

weighting" where the four priority rules who help to establish priorities (e.g., impact) among activities are added in order to provide a PRST priority value);

The combination of Brown, Ouimet, Draman and Boonkhun fail to explicitly teach the following limitations. However, Cicirello in an analogous art of scheduling for the purpose of removing a scheduled job and/or order from the work queue (page 6) as shown does:

- *a. removing the said scheduled job and/or order from the said work queue* (page 6, Algorithm 1, which teaches “remove this selected task” (e.g., scheduled job and/or order) “from the set of unscheduled tasks” (e.g., work queue));

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to remove a scheduled job and/or order from the work queue to improve the combination of Brown, Ouimet, Draman and Boonkhun, thereby giving the predictable result of providing a best solution (Cicirello, pages 5-6, last paragraph).

Claim 6:

The limitations of claim 6 encompass substantially the same scope as claims 2 and 14. Accordingly, those similar limitations are rejected in substantially the same manner as claims 2 and 14, as described above.

Claim 10:

The limitations of claim 10 encompass substantially the same scope as claims 2 and 14. Accordingly, those similar limitations are rejected in substantially the same manner as claims 2 and 14, as described above.

Conclusion

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Howie et al., (US 5,093,794) disclose a job scheduling system.
- Khaw (US 5,432,887) disclose a neural network system and method for factory floor scheduling.
- Matheson (US 5,623,413) disclose a scheduling system and method.

- Borg et al., (US 5,835,898) disclose a visual schedule management system for a manufacturing facility.
- Lilly et al., (US 6,088,626) disclose a method and apparatus for scheduling work orders in a manufacturing process.
- Mahapatro (US 6,571,215 B1) disclose a system and method for generating a schedule based on resource assignments.
- Muramatsu et al., (US 2003/0105543 A1) disclose a multi-process lot size scheduling method.
- Haupt, A Survey of Priority Rule-Based Scheduling, OR Specktrum, 1989, which disclose an evaluation of elementary priority rules.
- Thesen, Heuristic Scheduling of Activities under Resource and Precedence Restrictions, Management Science, Vol. 23, No. 4 (Dec., 1976), pp. 412-422 which disclose the field of heuristic algorithms for resource constrained scheduling problems.
- Luo et al., Near-Optimal Heuristics for Scheduling on Task-Dependent Machines, IEEE 1990, which disclose scheduling independent and dependant task.
- Lockamy III, A strategic alignment approach for effective business process reengineering: linking strategy, processes and customers for competitive advantage, International Journal of Production Economics, 1997 which disclose a conceptual framework and key principles for effective business process reengineering.
- Meade et al., Strategic Analysis Of Logistics And Supply Chain Management Systems Using The Analytical Network Process, Transpn Res.-E (Logistics and Transpn Rev.), Vol. 34, No. 3, 1998 which disclose that the principles of logistics are

defined and developed as strategies for achieving coordination and integration of the logistics network and supply chain.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Nadja Chong** whose telephone number is **571.270.3939.** The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **BETH BOSWELL** can be reached at **571.272.6737**.

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